



Maryland's Project SELECT in Middle Schools

(Student Engagement, Lunchroom Environment, Culinary Training)

Project SELECT was part of Maryland's 2016-2019 Team Nutrition training grant. SELECT's goals were to increase student participation in the National School Lunch Program and to improve their selection and consumption of vegetables and fruits. SELECT activities also focused on improving student's knowledge, attitude, and behaviors about vegetables, healthy eating, and school meals.

Five Maryland school systems participated in SELECT activities. Culinary and operations consultants, chefs, and Smarter Lunchroom Assistants provided training and technical assistance to school food services staff in 16 middle schools. Health education teachers were trained to deliver nutrition education lessons and activities to over 1,470 middle school students. These activities were implemented during school years 2017-2018 and 2018-2019.

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Part 1: Culinary/Operations and Smarter Lunchrooms Training and Technical Assistance

Training: an initial kick-off training was delivered at the beginning of the school year, followed by up to 4 additional trainings during school year

Technical Assistance (TA): 3-4 two-hour TA visits were provided to schools throughout the year

Topics: ordering and handling produce, assembling salads, understanding flavors and taste, roasting vegetables, planning and conducting tastings, general vegetable cookery (steaming, roasting), bundling entrees with vegetables, utilizing spices and herbs

Cafeteria Food Tastings: food tasting events were held in each school with students, family/parents, and school staff. Students provided feedback on new and/or improved menu items.



Reach of SELECT Culinary/Operations and Smarter Lunchrooms Activities

- Number of hours of staff training: **143.75**
- Number of Students Reached with Tastings: **7,569**
- Number of activities offered to School Nutrition Professionals focused on Culinary/Operations and Smarter Lunchrooms: **90**



****90% of participants felt very confident that they were able to learn culinary skills****

Part 2: Student Engagement Nutrition Education Modules

Curriculum topics include:

- USDA's MyPlate and the Dietary Guidelines for Americans
- The importance of eating fruits and vegetables
- Analyzing what influences their food choices

Reach of SELECT Nutrition Education Activities

- ◆ **6** SELECT nutrition education toolkit trainings to middle school health education teachers
- ◆ **12** hours of SELECT nutrition education toolkit trainings to middle school health education teachers
- ◆ **44** teachers with SELECT nutrition education toolkit trainings
- ◆ Over **8** schools implemented SELECT nutrition education lessons

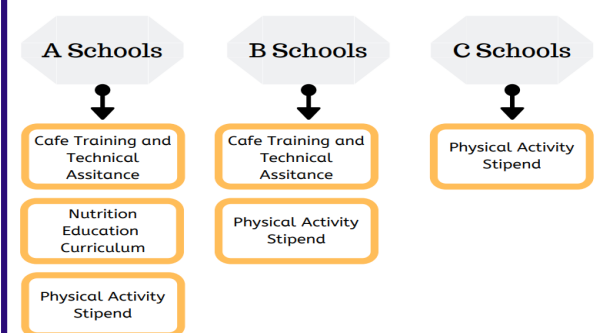


Student Taste Testing: Tasting vegetables and fruits either along the service line or in the dining area provided experiential learning to students. In some cases, these events also introduced School Meals to students who may not typically participate in the NSLP.

Part 3: Evaluation

To evaluate the impact of Project SELECT, partners worked with 23 schools in 5 Maryland School systems, also known as "Local Education Agencies." Within each system, some schools received the cafeteria environment (culinary/operations and Smarter Lunchrooms) component (A schools), some received that plus enhanced student nutrition education (B schools), and some received neither and served as control schools (C schools).

Local Education Agency (LEA)

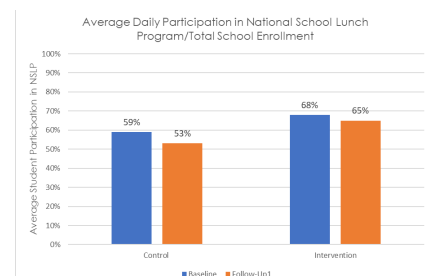


STATE REPORTING SYSTEM: AVERAGE DAILY PARTICIPATION (ADP)

Production Records from April/May of each intervention year were used to measure change over time in ADP (adjusting for enrollment). The data shows that NSLP participation declined among all schools, however the magnitude of decline was stronger in the control schools.

The intervention:

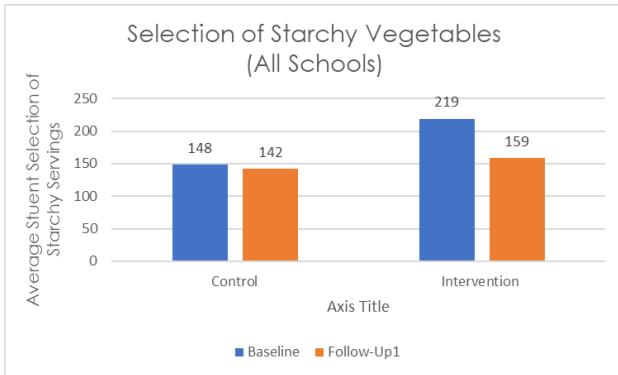
MINIMIZED a Decline in ADP



PRODUCTION RECORDS: VEGETABLE SELECTION

Production Records from April/May of 2017, 2018, and 2019 were used to measure the change over time in student selection of vegetables and vegetable subcategories, adjusted for average daily participation in the NSLP. Vegetable subcategories included: dark green, red orange, beans/peas, starchy, and "other" vegetables (salad, celery, cauliflower etc.). The intervention showed a:

DECREASE in Starchy Vegetable Selection



INCREASE in "Other" Vegetable Selection

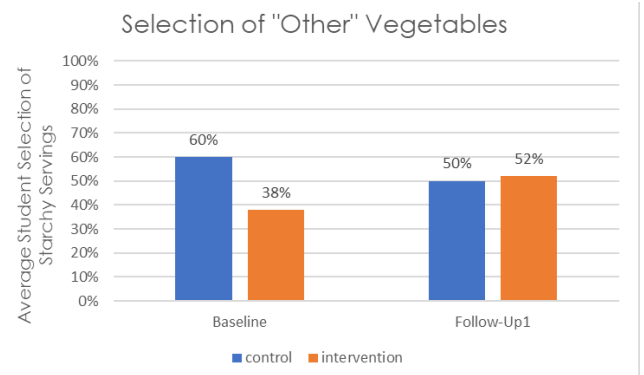
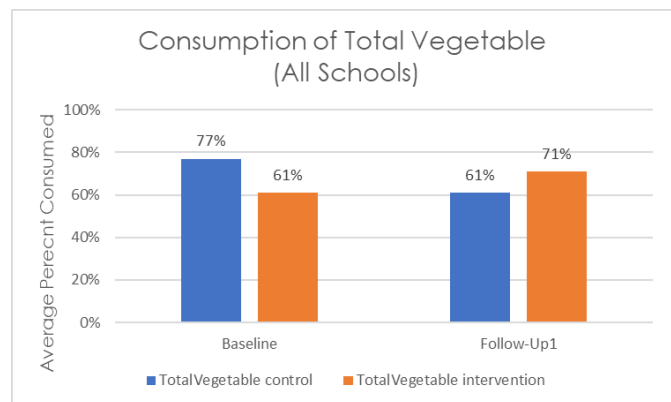


PLATE WASTE: VEGETABLE CONSUMPTION

We observed a random lunch period in each school at baseline and at the end of the first intervention year. During lunch, we randomly selected 40 trays and documented student selection of each school meal component. At the end of the lunch period, we measured the amount of food left on the tray ("waste") to estimate consumption of vegetable and vegetable subcategories.

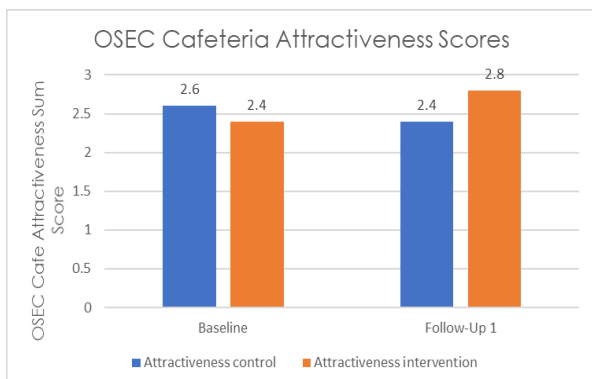
The intervention showed an:

INCREASE of Total Vegetable Consumption



OBSERVATIONAL SCHOOL ENVIRONMENT CHECKLIST: CAFETERIA ENVIRONMENT

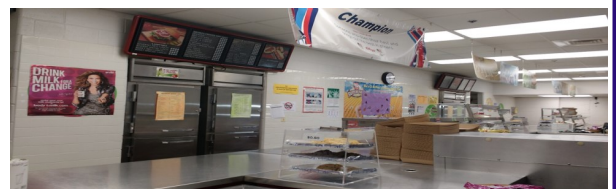
Using the OSEC, we measured changes in the cafeteria, including attractiveness. This score was based on healthy food marketing/promotion, bright colors, welcoming staff, and more. Intervention schools: **IMPROVED in Cafeteria Attractiveness Scores.**



Before
(Healthy Eating Posters)

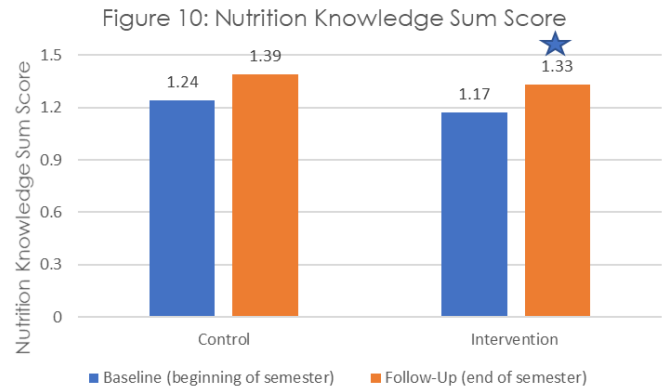


After
(Healthy Eating Posters)



STUDENT SURVEY: MY PLATE KNOWLEDGE

A survey was used to examine the impact of the Nutrition Education intervention on several student outcomes. Using aggregate student survey data, we learned that the average change in My Plate knowledge score changed from baseline to follow-up by 0.25 points among students who in the nutrition education intervention compared to 0.02 points in the control group.



Lessons Learned:

- **Adaptability in the cafeteria intervention allowed LEAs choose focus areas to improve vegetable selection and consumption.**
- **Some LEAs participated for 2 years and some for one year. Primary effects were sustained into the second year (not shown), suggesting that on-going training and technical assistance improved transfer of training content into practice.**
- **Smarter Lunchroom techniques, ex. vegetable/fruit signage, bundling vegetables with entrees, and food tasting events were observed in OSEC scores.**
- **Staffing and other challenges limited the implementation of the Nutrition Education Curriculum in some LEAs, which limits the ability to assess added impact.**
- **Future Evaluation: multi-day plate waste data could capture vegetable subgroup consumption, large scale/consistent electronic production records would allow for analyses over longer durations, incorporating focus groups could illuminate student and staff perceptions.**

Part 4: Conclusions and Recommendations

- **The culinary/operations and smarter lunchrooms training and technical assistance increased total vegetable consumption and other vegetable selection while decreasing starchy vegetable selection.**
- **Students that received the education intervention were more knowledgeable on the MyPlate Components following the intervention**
- **Multi-pronged approaches that encourage healthy habits both in the classroom and cafeteria may have a sustainable impact on child health and obesity prevention**



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